Self-Assessment Report for Fiscal Year 2003

Laboratory Management

Ernest Orlando Lawrence Berkeley National Laboratory

Performance Characterization

In fiscal year (FY) 2003, Berkeley Lab's Director Charles V. Shank continued to align the Laboratory's strategic directions with the Department of Energy (DOE) mission and the Office of Science (SC) plans and objectives. Working closely with the leadership of the Office of Science, the Director articulated a 20-Year Vision on the future of Berkeley Lab. Berkeley Lab and Office of Science managers addressed opportunities and issues, which included progress on science goals and programs, infrastructure, business systems, and appropriate security systems. The Laboratory made progress on key infrastructure stewardship issues: new Laboratory buildings, utilities improvements, and deconstruction of decommissioned accelerators.

In the area of business management, the Laboratory initiated several internal audits and process reviews as part of continuing efforts to tighten up business practices and reduce risks. Through these audits and reviews, it became apparent that prior Laboratory initiatives to streamline business processes and to make business practices more cost-efficient resulted in inadequate internal controls of some Laboratory activities associated with procurement, property, accounting records, and contractor/vendor interfaces. As a result, several changes have been made. A new procurement card system was implemented, with the number of authorized users reduced, and the requirements for user documentation, review, and manager oversight strengthened. In another matter, property cost accounting and custodial record keeping has been improved and, through efforts initiated by the University of California (UC), sensitive property now includes a larger list of items with a core list for the three UC laboratories.

A program for elevated levels of security against possible terrorist threats protects Laboratory employees and infrastructure, while allowing the Laboratory to remain open to visiting scientists. The cybersecurity program and plans, as a sustained and effective communications and information management system, protects DOE assets, as a sustained and effective communications and information management system.

In support of DOE's mission, and to advance the Laboratory's strategic science goals, Berkeley Lab's unique facilities and scientific resources are made available to other government agencies, universities, and industry. As the use of the Laboratory's national scientific facilities expands and the diversity of sponsors aligned with our strategic goals grows, the amount of non-DOE research will grow. Growth is consistent with DOE's interest in full access and utilization of the Laboratory's unique capabilities.

Berkeley Lab's community relations gained new levels of support from local governments. A new Friends of Science program continued to grow. Laboratory representatives continued active participation and dialogue in

meetings with city officials and other stakeholders. The Laboratory's Open house hosted an unprecedented 8,000 visitors.

The following examples are FY-2003 outcomes:

- Funding for a Molecular Foundry in support of the National Nanoscience and Technology Initiative. The project is on track for groundbreaking in December 2003.
- Growth of the Advanced Light Source (ALS). Three new beamlines were completed, and the Molecular Environmental Sciences beamline was commissioned. Seventeen hundred users are expected at the ALS by the end of the fiscal year.
- Advancing an astrophysics program to define the fundamental properties of the universe. The SuperNova/Acceleration Probe (SNAP) funding is included in the President's budget.
- The National Energy Research Scientific Computing (NERSC) Center expanded its IBM SP, making it the most powerful computer in the United States for unclassified research, with 6,656 processors and a peak performance of 10 teraflop/s (trillions of floating-point operations per second). A single NERSC computer has the largest aggregate memory of any unclassified computer in the United States—7.8 terabytes (trillion bytes)—with 44 terabytes of disk storage.
- The inertial fusion energy (IFE) science program has made consistent progress and is in the final stages of its “proof-of-concept.” The High Current Experiment is exploring the limits in current-carrying capability of an accelerator of intense beams, and has produced promising results regarding the cost of the driver.
- Internal audits and reviews were conducted, with the result that new procedures and business process controls are being implemented for procurement, property, records, financial documentation, and invoicing to improve Laboratory stewardship of public funds. Additional improvements are forthcoming.
- The projected ratio of research-to-support staff costs remained unchanged from last year at 2.2. Management stewardship limited the overall indirect-rate growth despite increases for waste management, travel systems support, and other required nondirect costs. Payroll burden increases, primarily from increases in health-related benefits, were also carefully managed.
- Dr. Shank established a new Best Practices Diversity Council (BPDC) for strengthening and institutionalizing the best efforts among divisions, and to more broadly disseminate these efforts across the Laboratory.

Performance Objective #1

Laboratory Leadership: *Laboratory leadership, in support of Laboratory missions, ensures the stewardship and viability of the institution.* **(Weight = 100%)**

Summary

Berkeley Lab senior management advanced the missions of DOE through leadership in science, energy, and environmental research. Laboratory leadership continued to align the Laboratory's strategic directions and competencies with DOE plans and objectives to achieve progress toward key objectives and critical outcomes. Berkeley Lab's plans continued to be coordinated through the FY-2003 Comprehensive Planning Calendar. The Director of Laboratory planning participated in DOE workshops and was part of the DOE Headquarters (HQ) team that prepared the draft SC Strategic Plan.

The Laboratory continued to effectively manage funding and resources in support of its goal to conduct quality research and development while protecting the public's investment in science. Several systems and reporting tools were used to provide essential information to senior management for strategic planning and informed decisions. The Procurement/Receiving/ Payables System, for example, provided a streamlined method for processing procurements, receivables, and payables, and integrating quality controls and efficient operations.

The Laboratory continued to enhance its effectiveness in managing the growing research support from other sponsors. While the Sponsored Projects Office (SPO) is responsible for institutional endorsements of proposals and acceptance of funding awards, many other Laboratory organizations, such as the Office of Planning and Strategic Development, Administrative Support Department, Technology Transfer Office, Patent Department, and Financial Services Department, contribute to the management of the program. These offices worked to provide constructive relationships with sponsors and to coordinate information for the DOE Berkeley Site Office (BSO) and with DOE Headquarters (HQ).

Laboratory Management participated in community activities, including local boards and commissions, educational organizations, Chambers of Commerce, community foundations, and environmental groups, as well as service clubs. Management also endorsed enhanced communication with community groups through the wider distribution of Laboratory news and the Community Relations/Science Education outreach program, Berkeley Lab Friends of Science. The Public Affairs Office continued its expanded role as liaison to key stakeholders in the local and regional community.

Berkeley Lab division management engaged in the annual diversity review and planning program, submitting diversity action plans that target their short- and long-term staffing and recruiting needs. Division managers conducted specific efforts toward diversity outreach and student internships

activities supported by the Laboratory's School-to-Career and Center for Science and Engineering Education programs. Berkeley Lab's School-to-Career and mentorship program has nearly doubled the number of student interns, advancing the diversity planning and science mission for DOE.

Objective #1 Criterion 1.1

Institutional Stewardship and Viability: *Evaluation of Laboratory senior management's approach, deployment, and results for ensuring that the institution is capable of executing its current and future missions.* (**Weight = 100%)**

Objective #1 Criterion 1.1 Performance Measure 1.1.a

Strategic Planning: *Evaluation of management's approach for strategic planning that aligns Laboratory vision, goals, programs, resources, facilities, and performance expectations with DOE's mission, strategic plans, and objectives. The assessment focuses on achievement of the key objectives contained in the Laboratory's plans and how this information is communicated with DOE*. **(Weight = 20.0%)**

Assumption:

Weighting for Approach/Deployment and Results: A/D = 40%, R = 60%.

Gradient: See Table 1 at the end of this section.

Performance Measure Result

Management Approach for Strategic Planning

Berkeley Lab Director Charles V. Shank continued to work closely with DOE officials to advance DOE missions through strategic goals that align the Laboratory's scientific and operational activities with DOE's scientific and management priorities. On behalf of DOE, SC especially, and Berkeley Lab's national role for all research sponsors, the Director and his management team also continued to address and improve accountability and business practices to execute its programs.

In FY 2003, Berkeley Lab and SC leadership initiated a management roundtable for candid discussions on the 20-year future of the Laboratory. This roundtable addressed the Laboratory's challenge to become more than a collection of independent research programs. We are moving from a multiprogram organization of excellent independent efforts to program "interdependence" that creates and sustains value from program diversity.

The scientific goals founded on these strengths are identified in a new 20-Year Vision for Berkeley Lab and is included in the Director's Statement, which prefaces Berkeley Lab's Institutional Plan. These goals were reviewed with DOE programmatic officials during the roundtable and in a range of management settings at Berkeley and DOE HQ. Recent planning cycles have included a number of critical objectives in key areas:

- *Discover the composition of the universe through particle astrophysics and the measurement of dark energy.* Berkeley Lab is undertaking a research and planning effort for an astrophysics satellite program that will define the fundamental properties of the universe through the observation of supernovae.

- *Understand and engineer living systems for Department of Energy Missions.* In the era that follows the sequencing of the human genome, a new biology program for the Office of Science is directed at developing more predictive and quantitative understanding and control of microbiological systems.
- *Design radically new generations of materials with tailored properties.* Berkeley Lab proposes a Molecular Foundry to advance the Office of Science role in the National Nanotechnology Initiative.
- *Achieve research breakthroughs using soft x-ray and ultrafast science tools.* Berkeley Lab has been working with the community of scientists interested in ultrafast phenomena to develop powerful scientific tools to address this area of science.
- *Enable dramatic discoveries through science-driven computer architectures.* The NERSC Center, other laboratories, and computer manufacturers formed partnerships to develop a new generation of computing architectures tailored to scientific applications. These new architectures offer the promise of the most powerful data analysis and simulations possible, addressing DOE scientific demands, including those coupled to energy security and the environment, living systems, and the properties of matter and energy in the universe.
- *Advance inertial fusion energy research for electric power generation through heavy-ion drivers.* The heavy-ion fusion concept makes use of decades of DOE-funded accelerator development for high energy and nuclear physics to develop a heavy-ion accelerator as the driver to compress inertial fusion targets. Among fusion concepts, heavy-ion fusion is unique in its ability to protect the fusion chamber from neutron and blast damage, making a possible lifetime for a carbon-free electrical power source decades long.
- *Understand global climate change and develop carbon sequestration strategies.* Berkeley Lab is advancing the frontiers of knowledge in all three DOE emphasis areas for carbon sequestration—soils, oceans, and geologic reservoirs.

Achieving these goals will have major scientific and societal consequences. For example, advancing the ability to exploit the extraordinary processes and structures of living systems will have broad impacts, from improving energy security to understanding human disease. Fabricating new generations of materials forged at atomic scale will reduce the environmental impact of manufacturing, and will gain energy efficiency with advanced technologies. Discovering the composition and fate of the universe will be a big step in understanding the nature of the earth in the cosmos.

Berkeley Lab senior management maintained communications with DOE managers to advance these objectives and other issues. Significant follow-up was also achieved by project and program scientific leaders with

DOE managers and with the national scientific community. The Director's management activities involved participation in DOE and SC Directors' meetings, and regular meetings with the SC Director, DOE/SC Associate Directors, and the BSO Manager.

As indicated above, Berkeley Lab planned and conducted a new approach to the institutional review with the SC Director through a "roundtable" format that focused on special topics and issues of particular interest to both the Laboratory and DOE. Within an overarching theme of "Integrating Research through Strategic Goals," focus areas included Understanding and Engineering Living Systems (including the future of the Joint Genome Institute and Genomes to Life); the future of High Energy and Nuclear Physics; Soft X-Ray and Ultrafast Science; New Generations of Materials with Tailored Properties; Environmental Science for Carbon Sequestration and Subsurface Remediation; Opening a New Frontier for Scientific Computation; and Site Infrastructure and Safety for Science.

Senior management worked to strengthen operational systems for effective stewardship for the public's investments in science. In the full letter and spirit of the President's Management Agenda, more robust management practices hold managers and staff accountable for results. These practices include implementation of systems for sponsored projects tracking (RAPID) and revisions to property and procurement controls discussed in the results sections below for 1.1.a, 1.1.b., and 1.1.c. The Laboratory renewed communications that place high value on creativity, integrity, best business practices, and a safe and secure working environment. The Laboratory has taken further steps to assure the security of information, and is recognized for the quality and effectiveness of its cybersecurity monitoring program.

Planning and management activities addressed the resources for modifications to business systems accountable to the highest standards of public review. In collaboration with DOE, the strategic science goals have been reviewed and business systems have been forged to support the Under Secretary of Energy's principles for SC contracts. We seek to refine and strengthen effective roles and responsibilities of DOE and contractor personnel, their behaviors, and their expectations.

Berkeley Lab's plans continued to be integrated through the Director's Office. Coordinated through the FY-2003 Comprehensive Planning Calendar, the planning systems used at Berkeley Lab are intended to support the strategic directions identified in DOE's budget submission documents. The Director of Laboratory Planning participated in DOE workshops, and was part of the DOE HQ writing team that prepared and reviewed drafts of the SC Strategic Plan and the long-range science plans embraced by program offices and the scientific community. The Laboratory's scientific goals, outlined above, are directly complementary to the SC Strategic Plan draft. Laboratory planning systems (e.g., institutional;

operations; environment, health, and safety; facilities; and security) are intended to improve management of the Laboratory as well as to support the President's Management Agenda and the Government Performance and Results Act of 1993.

The Laboratory Director called on program area coordinators and division directors to outline strategic directions and initiatives and to engage in annual strategic planning, budget planning, and project management planning. Through these processes, division directors were delegated specific planning and development activities for DOE programs, for programs sponsored by agencies other than DOE, and for future program directions. Laboratory Institutional Plans were developed, and strategic planning meetings were organized by the Directorate offices and were coordinated through the Planning and Strategic Development Office and the Initiatives Support Group. These and other external efforts (e.g., Deputy Director's meetings with the Chief Research Officers of the other SC laboratories, and meetings of the UC Laboratory Directors and Deputy Directors) contributed to communication with DOE laboratories and a range of external constituencies.

FY 2003 Alignment and Review of Plans with DOE

During FY 2003, Berkeley Lab senior management maintained alignment of the Laboratory's research role with the Draft 2004–2008 Institutional Plan and the 20-Year Vision for the Future of Berkeley Lab. These planning documents, and other program plans and reports specify the key strategic goals the Laboratory is pursuing in support of DOE's missions.

- The Laboratory worked closely with the Office of Basic Energy Sciences on the development of nanoscience research and development and on research facilities to advance the National Nanoscience Technology Initiative.
- The Laboratory, with the Office of Advanced Scientific Computing, has presented a number of options to enable the United States to maintain a leadership position in scientific computing.
- The DOE Joint Genome Institute (JGI) is beginning a major reassessment of its capabilities for the Office of Biological and Environmental Research. The goal is to move from a specialist and focused direction supporting the sequencing of the human genome to becoming a national scientific resource. This mode of operation would support a broad range of applications of JGI technology for understanding genomes and their functions for multiple organisms.
- With the support of the Office of High Energy and Nuclear Physics, the Laboratory has continued to advance long-range plans for understanding the nature of matter and energy, including the nature of dark energy and dark matter. This includes support for scientific results now being obtained in supernova studies, at KamLAND, by the

Solenoidal Tracker at RHIC (STAR) detector at the Relativistic Heavy Ion Collider (RHIC), and the BaBar Detector for the Asymmetric B Factory.

- Berkeley Lab continues to play a key role in advancing DOE's mission to dispose of highly radioactive nuclear waste through its modeling and experimental validation of hydrology of the Yucca Mountain site.

The Laboratory has joined with DOE and the scientific community to further address space and other infrastructure needs of the growing user base as well as other facility needs. The Molecular Foundry will be a key resource for the National Nanotechnology Initiative. In addition, the Laboratory is working with SC to support dismantling the Bevatron following its illustrious scientific career. The proposed closure of the 88-Inch Cyclotron, a distinguished facility for the low-energy nuclear science community, must be accompanied by the resources for dismantling and deconstruction. The overall goal is to replace and construct new facilities identified in the Laboratory's Strategic Facilities Plan. These activities require close cooperation and collaboration with the Office of Infrastructure Management in SC, and with BSO, as well as with the UC Office of the President.

BSO participated in the annual Laboratory budget and validation reviews; the Laboratory Directed Research and Development (LDRD) Annual Plan and reviews; facility plans; environment, safety, and health plans; and other activities. The Laboratory worked with BSO day-to-day to achieve awareness of operations and results in a timely manner. General areas addressed in FY 2003 included BSO awareness and involvement in community outreach plans, Work for Others processing, ES&H self-assessment certification initiative, and management and financial audits.

Management and senior scientific staff participated in reviews and activities that define the requirements and frontier of the national research environment. Senior management personnel continued to serve as active members of, for example, the Basic Energy Sciences Advisory Committee, High Energy Physics Advisory Panel, Nuclear Science Advisory Committee, Health and Environmental Research Advisory Committee, and Energy Sciences Network (ESnet) Steering Committee. Senior management personnel also served on advisory committees for major facilities such as the Stanford Linear Accelerator Center, Advanced Photon Source, National Synchrotron Light Source, and the Spallation Neutron Source construction project.

Results of Prior Years' and Current Planning

Over the past year the Laboratory has made significant first steps in laying the groundwork for realizing many of its science goals. In particular, the Laboratory doubled the power of the NERSC Center computers from five teraflop/s peak capability to ten teraflop/s while continuing a program of

world-class science; transitioned the Joint Genome Institute to a national resource for use by multiple science agencies; moved closer to groundbreaking a state-of-the-art nanoscale scientific research facility and to major research and development (R&D) on a space-based mission for unraveling the mystery of dark energy; and formulated plans to maintain the Advanced Light Source (ALS) as the premier soft x-ray synchrotron radiation facility in the world. Current and prior years' planning, along with the review and alignment described above, contributed significantly to the following outcomes in FY 2003:

- *Design radically new generations of materials with tailored properties, including materials systems with precise electronic, structural, and optical properties.* Berkeley Lab's proposal for a Molecular Foundry to advance the SC role in the National Nanotechnology Initiative. Construction funds are included in the FY-2004 President's Request. Coupled to the nanoscience initiative is the development of a new microscope, the Transmission Electron Aberration-Corrected Microscope, which also is included in the FY-2004 President's Budget.
- *Discover the composition of the universe through particle astrophysics and the measurement of dark energy.* Berkeley Lab's international collaboration for a satellite mission, a SuperNova/Acceleration Probe (SNAP), received very strong support from DOE and other agencies. Funding of $8.4 million is included in the FY-2004 President's Request.
- *Understand and engineer living systems for Department of Energy Missions.* Berkeley Lab's efforts towards an integrated program of environmental microbiology, functional genomic measurement, and computational analysis and modeling received strong encouragement from the Office of Biological and Environmental Research. The Berkeley Lab Genomes to Life proposal also received support to establish high-throughput protein-complex characterization, functional genomics and metabolomics, and computational capabilities.
- *Enable dramatic discoveries through science-driven computer architectures.* The NERSC Center at Berkeley Lab is the foremost resource for large-scale computation within DOE's Office of Science and serves a nationwide user community of more than 2,500 scientists. In early 2003, NERSC expanded its IBM SP, named Seaborg, making it the most powerful computer in the United States for unclassified research. With 6,656 processors and a peak performance of 10 teraflop/s, Seaborg has the largest aggregate memory of any unclassified computer in the United States—7.8 terabytes (trillion bytes)—with 44 terabytes of disk storage.
- *Achieve research breakthroughs using soft x-ray and ultrafast science tools.* Berkeley Lab and the Stanford Linear Accelerator Center recently hosted a well-attended national symposium that outlined possible breakthroughs and the instrumentation that could advance the emerging science. Berkeley Lab has conducted studies and preconceptual design for a Linac-based Ultrafast X-ray Source (LUX) that would be a

powerful discovery tool for the field of ultrafast science. Berkeley Lab has successfully demonstrated the time-slicing method for producing femtosecond scale x-rays from bend magnets at the ALS. The Laboratory continued to expand the user program at the ALS, and worked with DOE to upgrade the facility to keep it at the cutting edge. The ALS is completing the construction of three new beamlines this year, expanding the end-station hours delivered to users by five percent over last year, and commissioning fully the Molecular Environmental Sciences beamline.

- *Advance inertial fusion energy (IFE) research for electric power generation through heavy-ion drivers.* The IFE science program has made consistent progress and is in the final stages of its "proof-of-concept," with four experiments exploring the physics of separate sections of the accelerator system. Last year, three of these experiments came on line, and the fourth finished construction this year. One of these, the High Current Experiment, is exploring the limits in current-carrying capability of an accelerator of intense beams and has produced promising results regarding the cost of the driver.
- *Understand global climate change and develop carbon sequestration strategies.* Berkeley Lab has implemented a coordinated suite of carbon concentration, isotope, and flux measurements in the Southern Great Plains, as part of the DOE Atmospheric Radiation Measurement Program. Simultaneously monitoring from crop fields, tall towers**,** and aircraft; this facility is possibly the best-instrumented site for regional carbon studies in the world.
- *Bevatron deconstruction.* Berkeley Lab received funding of $1.5 million, for FY 2003 and FY 2004, for the deconstruction and removal of the high-bay External Particle Beam Hall of the Bevatron.
- *Infrastructure enhancements.* The Laboratory worked closely with UC and DOE to settle on a proposal for a third-party-funded Research Support Building (Building 49) and to initiate the preconstruction design and environmental assessments.
- *Best Practices Initiative.* These are continuing efforts in Human Resources toward certification of systems; and the Project Management Office instituted tutorial sessions on project management for scientists.

In the area of business systems, the Laboratory has undertaken additional audits or reviews as part of a concerted effort to tighten up business practices and reduce risks. This includes internal audits or reviews on benefits eligibility, cost allowability, Work for Others receivables and funding, Berkeley Lab controls relative to asset control issues, procurement card assessment, and a chemical inventory system upgrade. We have put in place a new procurement card system that reduces the number of authorized users for the purchase of low-value supplies and services. We have also extended our Sensitive Property list to include a larger number of items, and are reviewing and improving our accounting systems, in particular the

capital asset accounting system. The Laboratory also responded to significant external audits on aspects of our business systems by, among others, the DOE Office of the Inspector General and the Congressional General Accounting Office.

A program for elevated levels of security against possible terrorist threats has protected Laboratory employees and infrastructure while allowing the Laboratory to remain open to students, faculty, and other visitors. The security condition level actions have been defined and posted in the Berkeley Lab Site Security Plan, and the current security condition level is included in *Today at Berkeley Lab*, distributed via email. The cybersecurity program and plans have enabled the protection of DOE assets as sustained and effective communications and information management. Berkeley Lab has remained appropriately accessible and vigilant through a real-time intrusion monitoring and blocking system developed at the Laboratory. The Laboratory has maintained a high level of dialogue with DOE on security systems.

Successes/ Shortfalls

The Laboratory has made significant progress towards its scientific plans and goals, especially support for its proposals for the Molecular Foundry and the SuperNova/Acceleration Probe (SNAP) satellite. Working with DOE, the Laboratory continues to address management and administrative issues that require further resolution. These issues include developing an agreed-upon plan for Bevatron deconstruction and taking steps to implement the plan; in particular, obtaining support for the demolition of the bay in the External Particle Beam Hall. The Laboratory continues to work with DOE to assure appropriate and cost-effective DOE oversight, including implementing a Best Practices management program.

Supporting Data

- Lawrence Berkeley National Laboratory Institutional Plans (prior years) (http://www.lbl.gov/Publications/Institutional-Plan)
- Lawrence Berkeley National Laboratory Draft Institutional Plan FY 2004–2008 (April 2003; LBID-2462)
- A 20-Year Vision: Getting a Sense of Berkeley Lab, in meeting binder from "Roundtable on the Future of Berkeley Lab"
- Agenda, "Roundtable on the Future of Berkeley Lab," May 9, 2003
- Berkeley Lab Cyber Security Web Site (http://www.lbl.gov/ICSD/security/guidelines/)
- Closeout Report, Department of Energy Review Committee Report on the Research and Development Review of the SNAP Experiment (July 9–11, 2002)
- Draft Office of Science Strategic Plan, April 2003

- Lawrence Berkeley National Laboratory Strategic Facilities Plan (June 2002) (http://fac.lbl.gov/Facilities/Planning/Publications/SFP_Rev5.pdf)
- Strategic Laboratory Missions Plan—Phase I (July 1996; see pp. 22, 68–69) (http://www.osti.gov/news/docs/summary.htm)
- Strategic Plan of the Office of Science (June 1999) (http://www.er.doe.gov/sidebar/stratpln.pdf)
- U.S. Department of Energy: Strategic Plan (September 1997) (http://www.osti.gov/portfolio/)
- Comprehensive Planning Calendar (http://www.lbl.gov/Publications/Planning/planning-calendar.html)
- Strategic Facilities Plan (http://www.lbl.gov/Workplace/Facilities/Planning/)
- Berkeley Lab Security Plan: "Site Safeguards and Security Plan for the Ernest Orlando Lawrence Berkeley National Laboratory" (Revision 3, Change 1; January 2, 2002) (http://www.lbl.gov/ehs/security/04sec_phys/SS_Plan_Title.html)
- Berkeley Lab Integrated Safeguards and Security Management (ISSM) Plan (http://www.lbl.gov/ehs/security/issm/ISSMfinal.html)

Objective #1
Criterion 1.1
Performance Measure 1.1.b

Effective Resource Management and Stewardship of Assets: *Evaluation of management's effectiveness to plan, prioritize, and manage costs, infrastructure, and staff resources consistent with DOE and Laboratory goals. Assessment focuses on performance results, which may include indicators of cost effectiveness, such as the ratio of S&T to A&O staff, representative operations support activities, and other productivity or reengineering indicators.* **(Weight = 20.0%)**

Assumption:

Weighting for Approach/Deployment and Results: A/D = 40%, R = 60%.

Gradient: See Table 1 at the end of this section.

Performance Measure Result

Overview

Berkeley Lab has developed and implemented management systems that enable decisions for effective use of the Laboratory's resources in order to safeguard the public's investments in science. Supporting the financial management and planning systems described below, Internal Audit Services (IAS) assists Laboratory senior management at all levels in assessing financial and administrative risks, and evaluating controls to address those risks.

The performance measure for FY 2003 placed particular emphasis on the Laboratory-wide management of financial resources. Other important areas of asset stewardship include Human Resources and Infrastructure Planning. Effective human resources development activities are critical to the success of Berkeley Lab's program initiatives. The Human Resources Department facilitates proactive and strategic approaches that address its strategic goals in recruitment, work climate, employee and leadership development, and continuous improvement of its systems. Stewardship of physical assets includes planning for facilities, maintenance, and space utilization. In close coordination with DOE offices, the Laboratory prepares a Strategic Facilities Plan, which describes the facilities investments necessary to sustain the Laboratory's ability to make important discoveries to advance DOE's science and technology mission. Performance and results in this area for Human Resources and for Facilities infrastructure are included and evaluated in their respective sections of Appendix F.

Other areas of asset stewardship also received significant attention by Laboratory management in FY 2003. In addition to the financial systems discussed below, improved controls have been put in place for the expenditure of funds and accountability of taxpayers' investments. Emphasis was placed on instituting new procurement and property management systems and procedures. These will be addressed in their functional areas, Sections C.6 and C.7 of Appendix F.

Systems for Resource Management and Asset Stewardship

The primary objective of resource management and asset stewardship in Operations is to support science at the Laboratory while assuring the proper utilization and disposition of public funds. The Laboratory's focus on careful monitoring of budget and spending plans, actual costs, and indirect rates was an integral part of the efficient planning and management of Laboratory resources. The Laboratory Director, Deputy Director for Operations, Financial Services Department, and senior division managers actively participated in strategic planning to provide informed decisions for effective cost control and asset and resource management. In addition to the financial systems, improved controls have been put in place for the expenditure of funds, including a new procurement and property management system. (See Appendix F sections on Procurement and Property Management.)

Forecasts for costs, budgets, rates, and project plans were also reviewed and evaluated by the Director's Action Committee (DAC), which is a vital part of the Laboratory's annual budget and planning process. In addition, DOE and BSO participated in the budget review process and approved the FY-2003 indirect rates.

The Laboratory actively supported the activities of the DOE Financial Management Systems Improvement Council (FMSIC), Federal Financial Managers Conference, DOE Accounting Officers' Conference, and the DOE Annual Budget Officers' Conference. Participation in organizations such as these enhanced the ability to communicate with other Laboratories in support of improved processes and the advancement of system development. It also provided the opportunity to examine funding and resource issues and discuss key topics such as cost reduction strategies, e-commerce, and best practices.

In addition, FMSIC directs a peer-review program to ensure the integrity of data for each report, which includes site reviews by teams from different organizations. Team members assist other DOE laboratories in their assessment of functional cost data. The Laboratory accepted an invitation from FMSIC in FY 2001 to become an active member of the Functional Support Cost peer-review team. Berkeley Lab continues to participate, represented by an employee in Financial Services.

Last year, the indirect budget was developed using a new format, Activity Based Budgeting. The objective of Activity Based Budgeting was to create a budget for each activity that supports Operations and the Laboratory, identifying the corresponding resources, value, and cost. The Activity Based Budgeting process includes budgets for general institution indirect, organization burdens, and recharge centers. Activity Based Budgeting was also used this year for the FY-2003 Indirect Budget Submission. The new format provides Laboratory senior management with necessary

documentation for more accurate planning and enhanced cost-control management. The documentation includes detailed descriptions to clarify the activities, identify the consequences of not funding the activities, and provide further information to assist in making allotments.

The annual Director's Budget Review was conducted in the third quarter. The purpose of the review is to evaluate the Laboratory's financial status and to review projects and budget requests for the following year. Financial Services organized and coordinated the review, which provided a comprehensive analysis of current-year costs versus funding, the presentation of essential initiatives and projects for the future, and spending plans for FY 2004. Participants in the review process included Laboratory senior management, division directors, and DOE representatives.

The Director's Budget Review provides senior management with key financial and resource data necessary to evaluate the impact of funding and costs projected for current and future Laboratory projects. The information presented during the review is critical to Laboratory senior management and is used by DAC for effective planning, decision support, and resource management.

The Management Report is another essential tool and is used by senior management as the primary support for sound decisions regarding funds control, budgeting, and resource management. The report is prepared by Financial Services and is typically presented as required to senior management during the second and third quarters. Last year, Financial Services significantly improved the report’s presentation by using a CD format with enhanced graphics, audio narration, and drill-down capabilities that provide additional detail.

IAS assesses financial and administrative risks and evaluates risk-management controls. An audit committee of twelve key personnel and managers from Berkeley Lab, UC, and DOE has been appointed for the purpose of communication and coordination of internal audit and related matters. The intent is to promote dialogue among a variety of participants who collectively represent the clients of IAS and stakeholders of the Laboratory. IAS schedules and hosts audit committee meetings at least three times a year. An important function of the committee is to review major reports and associated findings, and major activities and their influence on the program of regular audits.

As a consequence of improper ESnet contractor payments, which were subsequently recovered, the Laboratory has strengthened the process and signature controls for approving contract modifications and invoices. The Laboratory is further reviewing all ESnet contractual relationships as an element of a comprehensive review. These and other accountability steps are being taken to assure fiscal-responsibility performance for the stewardship of public funds.

The Institutional Plan also supports the planning process. It provides an overview of the Laboratory's mission, initiatives, resource requirements, and overall strategic plan for the next five years. Future requirements for projected staff and funding are included in the report and contribute significantly to the Laboratory's management and planning process.

The following financial systems and analysis tools were used to provide effective operational reporting and decision support:

- Financial Management System (FMS)
- Procurement/Receiving/Payables System (PRP)
- Research Administration Proposal/Project Information Database System (RAPID)
- Billing and Accounts Receivable System (BAR)
- Project Management Tracking System (PMTS)
- Janus budgeting tool

Planning, development, and implementation of systems are critical to providing timely and accurate reporting and analysis tools for optimum operations management. The FY-2003 Annual Financial Systems Plan was prepared and submitted to DOE in January 2003. The Plan summarized major projects (planned or implemented), such as RAPID and the Gelco Travel System. It outlines a plan for system enhancements and upgrades, such as the PRP System, accelerated month-end close, banking service implementation, and the Technology Transfer Database.

The Systems Plan also provides evaluations of current systems and projects, such as Berkeley Lab Information Systems (BLIS), a multi-year project for an integrated data warehouse. Another system planned for FY 2004 is ePME (Electronic Portfolio Management, Tracking and Reporting Environment), which was also evaluated. The project goal is a corporate information system that will manage, track, and report on research and development projects and integrate data from other DOE proposal and financial management systems.

Effective financial and resource management includes education and training in financial processes and systems. Continuing education is encouraged and promoted at the Laboratory. Employees are provided with ongoing training opportunities. Courses offered throughout the year include using the PRP System, performing resource adjustments, setting up a project in FMS, initiating queries to retrieve financial information, Web reporting, and the use of the Janus budgeting tool. In addition, a self-guided, Web-based course is available on the federal budget process and unallowable costs.

The Financial Network group continues to provide a format for disseminating information to the financial community. It was established through the partnership of Financial Services and Administrative Services. The Financial Network provides relevant training and guidelines for effective operational management, as well as a means in which to share information and to discuss and/or resolve timely issues related to financial management.

In FY 2003, Berkeley Lab determined that there was $76 million in unidentified, fully depreciated assets on its balance sheet. These assets involved costs, booked as fixed assets between 1987 and 1998, that had not been individually identified. Internal Audit Services has reviewed this matter, assessed the impact to financial statements, facilitated asset identification, and recommended appropriate corrective actions to Laboratory management.

Historical Trend

Institutional Indirect Rates

The Laboratory's indirect rates were consistently monitored and reviewed for accuracy and appropriateness, reflecting cost-control efforts and ensuring compliance with DOE regulations and Cost Accounting Standards (CAS). The following table represents the Laboratory's institutional indirect rates for the past five years.

Institutional Indirect Rates

FY 1999–FY 2003

	FY 1999	*FY 2000*	*FY 2001*	*FY 2002*	*FY 2003*
General and Administrative	20.5%	20.5%	19.1%	45.0%*	45.0%*
Site Support	20.0%	20.0%	19.5%**		
Payroll Burden	37.0%	36.0%	36.5%	36.5%	38.6%

** A segment of the FY 2002 indirect rate restructure and simplification process included the combination of G&A and Site Support into a composite "General Rate" of 45%.*

*** Reduction from FY 2000 due to recovery of Work for Others (WFO) Site Support rate.*

Research-to-Support-Staff Ratio

The Laboratory maintained a consistent ratio of $2.2 research labor costs for every $1.0 of support staff labor costs over the past five years. The following table illustrates historical data from FY 1999 through FY 2003:

Research to Support Staff Ratio ($)
FY 1999 - FY 2003

	FY 1999	*FY 2000*	*FY 2001*	*FY 2002*	*FY 2003**
Support	$1.0	$1.0	$1.0	$1.0	$1.0
Research	$2.2	$2.2	$2.2	$2.2	$2.2

**Projected*

Indirect Cost Efficiency

The Laboratory's total indirect costs compared to overall operating costs remained steady over the past five years. The percent of indirect versus operating costs ranged from 28.06% in FY 1999 to a projected 26.42% in FY 2003. Maintaining this stability was the result of effective cost control and resource management. The following illustrates the Laboratory's indirect costs versus operating costs from FY 1999 through FY 2003:

Indirect Cost Efficiency
FY 1999 - FY 2003

	FY 1999	*FY 2000*	*FY 2001*	*FY 2002*	*FY 2003**
Operating Costs	$325.00	$344.00	$377.50	$393.00	$399.70
Indirect Costs	$91.20	$94.00	$98.60	$103.20	$105.60
% Indirect vs. Operating	28.06%	27.33%	26.12%	26.26%	26.42%

**Projected*

Composite Labor Rates

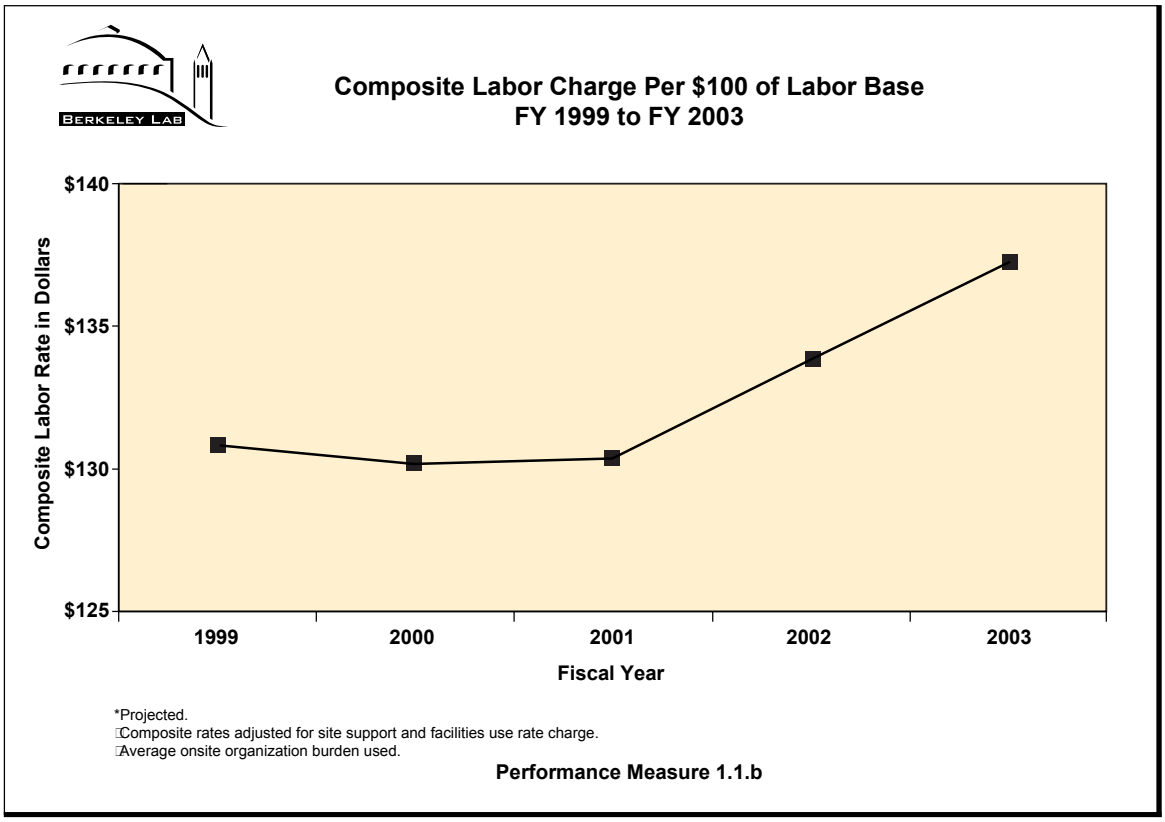
The projected composite labor rate at the Laboratory increased from last year by 2.5%, due to a 2.1% increase in the payroll-burden rate in FY 2003. The following table and chart illustrates the Laboratory's five-year trend:

Composite Labor Rates per $100 of Labor Base
FY 1999 - FY 2003

	FY 1999	*FY 2000*	*FY 2001*	*FY 2002**	*FY 2003***
	$130.99	$130.09	$130.43	$133.85	$137.26
Prior year variance	0.9%	-0.7%	0.3%	2.6%	2.5%

Historical data adjusted to reflect site support and facilities use rate changes.

**Adjusted for consistency (average onsite org burden rates used).*
*** Projected*



Historical Trends Analysis

The overall historical data relating to indirect costs, as represented by the Institutional Indirect Rates, Research-to-Support Staff Ratio, Indirect Cost Efficiency, and Composite Labor Rates, show a recent steady or slowly increasing trend (since 2001). Not represented in these summary quantitative numbers is a continuing and vigilant effort by Laboratory management to control such costs. However, there have been significant indirect cost drivers over which the Laboratory has had little or no control, and some increases were deliberately made for responsible management

stewardship. The key mechanisms for maintaining control on these rates have been reductions in staff, postponement of acquisitions, and reduction in some discretionary budgets.

In the case of the Institutional Indirect Rates, specific cost drivers have resulted in a sustained increase in each of the last three years. For example, between FY 2000 and FY 2001, there was a 16% increase in Facilities costs, half of which was due to increased utility costs at the time of the California energy "crisis" ($3 million to $4.7 million). Between FY 2001 and FY 2002, cost for administrative services increased 19%, due largely to responses to new DOE travel regulations. For stronger management stewardship, the Directorate budget increased to include division director salaries and an increased Laboratory Directed Research and Development budget. Costs for Environment, Health and Safety jumped 25% from FY 2002 to FY 2003 (projected), due largely to a new requirement that waste management had to be paid from Laboratory overhead rather than through direct funding. These five areas represent 66% of the total projected FY 2003 indirect budget ($69 million of $104.5 million). Managing such cost drivers makes maintaining a nearly flat (slightly increased) overhead rate a major accomplishment. The increases due to unfunded mandates and other added requirements make the maintenance of a flat Research to Support Staff Ratio a noteworthy accomplishment as well.

The major drivers for the composite labor rate have been steadily increasing components in the "payroll burden" (fringe benefits). Over the past three years (FY 2000 to FY 2003, projected), healthcare-related cost increases included an Old Age Survivor and Disability Insurance increase of 41%, a health-plan increase of 36%, an annuitant's health-cost increase of 112%, and Medicare increase of 32%. These four areas, relatively inflexible to management decisions, represent 48% of the total projected FY 2003 payroll burden ($33.8 million of $70.7 million); their cumulative increase is 48%. Responsible management stewardship limited the Composite Labor Rate increase to 5.5%. Combined with the overhead cost drivers, maintaining a nearly flat Indirect Cost Efficiency ratio is a notable accomplishment.

Highlights for FY 2003

Berkeley Lab continued its close involvement and coordination of system improvements with the DOE Financial Management Systems Improvement Council and other federal and DOE conferences. As a partial response to current directions, an example of a major business system currently under development is the Integrated Management Navigation System (I-Manage). This is a DOE project that supports managerial cost accounting and the integration of budget reporting and execution. Another system planned for implementation is the Standard Accounting and Reporting System (STARS), a DOE financial management system that will be the foundation

for linking budget formulation, budget execution, financial accounting, financial reporting, cost accounting, and performance measurement.

The Functional Support Cost Report is a comprehensive document prepared annually for DOE that reflects Laboratory costs by functional activity in support of their direct mission. For the first time this year, DOE auditors reviewed the Laboratory's Functional Support Cost Report during their validation process. The Laboratory, the first in the DOE System to be reviewed, was commended for the professional and well-organized manner in which the materials were presented. There were no significant findings.

The Management Report continued with improvements to increase information in a succinct and user-friendly environment. Additional enhancements this year included Recovery by Division graphics and Operations Division and Department Head forecasts. The Management Report is well received and continues to be a critical part of effective financial management at the Laboratory.

Process efficiencies and the utilization of system technology provided the Laboratory with the necessary tools for successful resource management, operational effectiveness, and cost reduction. For example, the use of the PRP System streamlined vendor disbursement payments and procurement processing. PRP combines three processes into one integrated system, managing purchasing, receivables, and payables. In addition, the implementation of sound accounting practices and financial stewardship supported the Laboratory's ability to effectively manage its resources.

Electronic Data Interchange (EDI) is another current cost-reduction activity that is being pursued at the Laboratory. High-volume vendors are continuously sought and tested for implementation. EDI provides the capability of considerably decreasing the number of invoices processed, resulting in the effective management of resources.

As discussed above in Historical Trends Analysis, the Laboratory has responded in numerous ways to external drivers of increased costs. Strong management actions have minimized the financial impact of such drivers on the Laboratory's scientific productivity in support of DOE and other sponsors' missions.

Successes/ Shortfalls

The Laboratory continued to effectively manage funding and resources in support of its goal to conduct quality research and development. Several systems and reporting tools were used to provide essential information to senior management for strategic planning and informed decision making. The PRP System, for example, has provided a streamlined method for processing procurements, receivables, and payables, and integrates quality controls and efficient operations.

The Management Report continued to be an effective tool that provides key financial data for planning, prioritizing, and managing infrastructure, staff resources, and costs consistent with DOE and Laboratory goals.

The Laboratory has participated in several organizations that support improved systems and processes, and continues to plan and develop new systems and technology for improved reporting and analysis.

Continued education and training is an important part of utilizing current tools and technology. The Laboratory provided employees training opportunities in areas such as using the Financial Management System and the PRP System. The Financial Network is another platform in which key information is shared and timely issues are discussed.

Key indicators of effective performance include the ratio of science and technology labor costs to administrative and operational staff labor costs. The projected ratio of research to support staff costs was maintained at the level of $2.2 for the past five years. Other performance indicators included the total indirect costs as a percentage of total operating costs. Through effective controls and resource management, Laboratory Operations has maintained a stable cost ratio for the past five years.

Institutional indirect rates were consistently reviewed and managed. Overall, the rates have remained steady over the past five years. The payroll burden rate increased from last year, while the general rate, G&A and site support, remained unchanged.

Internal audits and reviews are under way, and new procedures will be implemented for procurement and invoicing to improve Laboratory stewardship of the public funds.

Supporting Data

- Appendix F Performance Measures for Financial Management FY 2003
- Lawrence Berkeley National Laboratory Draft Institutional Plan FY 2004–2008 (May 2003)
- Lawrence Berkeley National Laboratory Indirect Rates FY 1999–2003

- Lawrence Berkeley National Laboratory Composite Labor Rates FY 1999–2003
- LBNL Institutional Indirect Budgets by Year, table FY 1999–2003
- LBNL Payroll Burden Costs, table FY 1999–2003

Objective #1
Criterion 1.1
Performance Measure 1.1.c

Research Support from Other Sponsors: *Evaluation of management's effectiveness in fostering non-DOE-sponsored work and collaborations that benefit from the unique research competencies and scientific facilities of the Laboratory build upon and complement DOE's mission, and advance the nation's scientific and economic interests. The assessment focuses on the planning and management of non-DOE-sponsored research, institutional resources to enable externally sponsored work, and the coordination with DOE.* **(Weight = 20.0%)**

Assumption:

Weighting for Approach/Deployment and Results: A/D = 40%, R = 60%.

Gradient: See Table 1 at the end of this section.

Performance Measure Result

General Trends for Research

Strategy to Serve as a National Scientific Resource

As a DOE National Laboratory, Berkeley Lab's research supports DOE's mission and serves the national interest as a scientific resource. The Laboratory plans for, and conducts, research that builds upon its core strengths. The Laboratory's strategic vision, as discussed at the senior management roundtable with Office of Science leadership is outlined in the 20-Year Vision. This vision is to create and sustain value from our program diversity, moving from a multiprogram organization of excellent independent efforts to program "interdependence." To this end the Laboratory fosters science supported by a range of sponsors, building capabilities and supporting our national scientific role. As described in Section 1.1a., central to Berkeley Lab's vision is advancing science along key scientific frontiers: matter and energy in the universe, quantitative biology, nanoscience, x-ray-based science, scientific discovery through advanced computing, and energy technologies and environmental solutions. Our strategy for serving as a national scientific resource supports these key directions. Laboratory senior management and scientific division leadership select research supported by other sponsors that contribute to these key areas and builds the Laboratory's underlying competencies.

Consistent with our strategic goals and in support of DOE's mission and consistent with its policies, Berkeley Lab has many unique facilities and scientific resources that are made available to other government agencies, universities, and industry. The Laboratory's DOE mission areas that hold the strongest interest for collaboration by other organizations include Biological and Environmental Research, Basic Energy Sciences, Energy Efficiency and Renewable Energy, and in the future, High Energy and Nuclear Physics. In the immediate future, the proportion of support from non-DOE sources is planned to remain approximately level at 20 percent of the research effort. However, as the use of the Laboratory's national

scientific facilities expands and the diversity of sponsors aligned with our strategic goals grows, the proportion of non-DOE research may increase to 25 percent or more of the total Laboratory budget. This growth is consistent with DOE's interest in full access and utilization of the Laboratory's unique capabilities.

Management Highlights in Support of Work for Other Sponsors

Berkeley Lab continued management and planning efforts to strengthen its research service and scientific activities in support of federal agencies and local governments. The Laboratory established an Office of Homeland Security whose directive is to raise the level of participation and research planning in support of the Department of Homeland Security (DHS). The Laboratory hosted DHS research leadership and engaged in planning meetings with key DHS staff. In addition, the staff of the Laboratory's Office of Homeland Security met with other defense and security agencies to assure that the Laboratory's expertise and research outcomes can be fully utilized to address the nation's security needs. The homeland security contact information was communicated with the Office of Science leadership.

To further develop Berkeley Lab's long-term strategy for full development of biological sciences research capabilities and to serve that nation's interest in improved health, Berkeley Lab recruited a Life Sciences Division (LSD) Director, who has a joint appointment with the University of California at San Francisco, one of the nation's leading medical schools. The Office of Science was involved in discussions regarding the appointment. The new Director will enhance efforts that integrate the research capabilities developed by the Office of Biological and Environmental Research to serve the National Institutes of Health. The new leadership is focusing on quantitative systems biology, which should offer great insight into how cells and organisms function and how disease processes are manifested and potentially controlled. This focus area was addressed with Office of Science leadership during the Roundtable on the 20-Year Vision of Berkeley Lab.

As indicated in the section on Work for Others (WFO) Development Trends, Laboratory division leadership and senior management work with targeted federal agencies to best advance science and utilize the Laboratory's capabilities for the national interest. Management's key efforts were directed towards strengthening relationships with NASA and NASA Laboratories, with the Department of Homeland Security, and with the National Institutes of Health. Division leadership and Laboratory management also supported the growth of ties to universities and industry for nanoscience research, and supported energy research that assists the state and industry, including the North American Electric Reliability Council.

The Laboratory is further strengthening its ties to a broader range of campuses, beyond its historic ties to the University of California at Berkeley. Laboratory planners have analyzed the growth in ties to other campuses and are specifically examining ways to expand academic ties in areas such as nanoscience, astrophysics, biological science, and homeland security research. These efforts may contribute to further WFO growth from academic institutions in the future.

To assure effective and efficient administrative support for Berkeley Lab's national research strategy and for proposal submission to other sponsors, Berkeley Lab has further developed the Sponsored Projects Office, whose manager reports to the Laboratory's Chief Financial Officer. The Sponsored Projects Office is structured around supporting specific scientific divisions. A Sponsored Projects Office contracts officer is assigned to support one or more divisions to assist with all types of agreements such as CRADAs, WFO, and User Agreements. This ensures one point of contact, regardless of the type of agreement or type of sponsor, and provides one point of contact for a Principle Investigator's (PI) administrative needs. In further support of WFO, the Administrative Services Department provides the PI with proposal preparation, cost monitoring and post award administration services. The Technology Transfer and Patent Departments provide support in licensing and patenting resultant technologies. The Financial Services Department supports DOE contract modifications (funds received), billing, and accounts receivable functions needed for the financial management of non-DOE work. These Departments worked to provide a constructive relationship with sponsors and to coordinate information with BSO and for DOE HQ.

Berkeley Lab's implementation of the PeopleSoft Grants Management research administration module, Research Administration Proposal/Project Information Database (RAPID) is an important business-systems accomplishment. The system was designed to meet Berkeley Lab's continued increase in, and reliance on, sponsored research activities and was also designed to meet the needs of Laboratory scientists, managers, and support staff. RAPID went live in May 2003. We are the first government institution and first DOE laboratory to succeed in implementing the Grants Management System. By doing so, we have further modernized and integrated our institutional information systems. In addition, we have shut down our legacy SPPT system, saving approximately $11,000 per month in license costs through elimination of the costly FOCUS programming language and outsourced mainframe host. RAPID is seamlessly integrated with other PeopleSoft enterprise systems, such as financial management and human resources.

RAPID has provided Principle Investigators and support staff with an Award Management Report which, for the first time, provides real-time financial information to help manage non-DOE projects. Information includes award values, costs, and cash-management information on one

panel, accessible in RAPID and in the Berkeley Lab data warehouse on the internet. RAPID also provides, for the first time, user access to sponsored research data. RAPID allows PIs and support staff the on-line ability to query for sponsor and funding information and can provide various institutional rollup data for management's use.

To enhance the cross-functional efficiency of Laboratory departments supporting WFO, a cross-functional SPO/RAPID users group was formed. Members from the scientific divisions and SPO met to discuss RAPID implementation and general WFO issues. Minutes were published and distributed. This forum will serve as an educational forum in FY 2004 and presentations on WFO topics will be on future agendas.

SPO has continued with the many internal and external efficiencies realized during the previous year. This includes a delegation from DOE to sign standard non-federal Work for Other agreements. All internal forms and standard contracts are on the SPO website, which offers easy accessibility. SPO scans all awards and distributes them to the scientific division (PI and support staff) along with Accounting and Budget personnel in FSD to speed up distribution of important documents. DOE has continued its policy of allowing SPO to send proposals to sponsors without DOE approval. Approval is only needed prior to acceptance of the award. This process has eliminated the DOE review of over 200 unfunded proposals a year.

This year Berkeley Lab has partnered with DOE to achieve further efficiencies. For example, proposals are emailed to the BSO and DOE/OAK at the same time, eliminating delays in receipt of proposals. DOE provides Berkeley Lab with email approvals of both proposals and waivers of federal administrative charge. This has eliminated unnecessary paperwork and delays. Another accomplishment is that Berkeley Lab was asked by the DOE Contracting Officer to review some of its "best practices" with DOE and Livermore Lab. As a result, Livermore Lab adopted some of Berkeley Lab's best practices in order to streamline its WFO process.

Non-DOE work increased to approximately $95 million in FY 2002 (as receivables rather than costs) and is estimated to be $103 million for this fiscal year. In 2002, there were almost 600 proposal actions, and as of the third quarter of 2003, we have approximately the same number of proposals. Berkeley Lab became the contracting office of the Virtual National Laboratory (VNL) to research and develop the extreme ultraviolet lithography (EUVL) (Tri lab) CRADA and is the contracting office for the follow-on VNL WFO agreements with SEMATECH.

Work for Others (WFO) Management Results

The Advanced Light Source (ALS) is expected to increase its user base from over 1,400 users this year to about 1,700 by 2004. Concomitant with this increase is support in structural biology and x-ray crystallography from

the National Institutes of Health (NIH) and from private sources, such as the Howard Hughes Medical Institute. Much of this effort is aligned with strategic Laboratory goals in nanoscience and quantitative biology. The Laboratory has a major user support organization to facilitate access and investments in ALS beamlines.

The responsibility for national welfare that now resides in the Department of Homeland Security depends on advanced technology and on the underlying capabilities of fundamental and applied science to support homeland security. The Office of Science and other DOE departments, including the Office of Energy Efficiency and Renewable Energy, support research that is essential for the nation's need to detect, prevent, and respond to terrorist attacks involving chemical, biological, and radiological threats. Further support of this research can potentially impact a broad set of technology needs, providing significant return on research investments. The Laboratory has designated a contact person for homeland security activities to foster access and sponsorship from the Department of Homeland Security. Several efforts are underway to promote research for homeland security. First, the Laboratory is pursuing an integrated analysis capability to assess the vulnerabilities and connectivities important to critical infrastructures in order to identify a suite of technologies for threat reduction and consequence mitigation. Second, the Laboratory is supporting local organizations so that the needs of local stakeholders and groups in municipalities will have impact on technology development. Some of the science Berkeley Lab offers for this national need are in the fields of aerosol transport modeling, compact neutron sources, environmental characterization, forensics and analysis, structural biology, information technology, infrastructure protection, and ultrasensitive detectors.

Other sponsors of sequencing, functional genomics, and computational biology have an increasing interest in the Office of Biological and Environmental Research capabilities associated with the genome program at Berkeley Lab and the DOE Joint Genome Institute, and the modeling capabilities of the Physical Biosciences Division. Primary sources include the NIH, U.S. Department of Agriculture, U.S. Environmental Protection Agency (EPA), the National Science Foundation, and the Defense Advanced Research Projects Agency (DARPA). The Laboratory, in partnership with the University of California at Berkeley, has completed the sequencing and annotation of the euchromatic genome of *Drosophila melanogaster*. The Laboratory has been in discussion with the Office of Biological and Environmental Research to improve the strategic access by other sponsors to this national sequencing resource.

The Laboratory's internationally recognized programs in cell and molecular biology are attracting support from biotechnology companies as well as from NIH and the Department of Defense (DOD) (for breast cancer, prostate cancer, and DNA repair studies). The Laboratory's new leadership

in the Life Sciences Division builds on strengths and relationships to foster relationships with the (NIH) and other biological science sponsors, as outlined in the Laboratory's 20-Year Vision.

Research in materials sciences that takes advantage of the capabilities at the Advanced Light Source, the National Center for Electron Microscopy, and the Center for X-Ray Optics is sponsored by other agencies. Primary sponsors are DARPA and private industry. Cooperative Research and Development Agreements (CRADAs) for this work are tabulated separately from Work for Others. These efforts directly support the Laboratory's goals in nanoscience.

EPA and the State of California are sponsoring research that builds on Berkeley Lab's experimental facilities and expertise in the buildings and electricity reliability areas. These efforts directly support the Laboratory's goals in energy technologies and environmental solutions.

In the area of high energy physics, the Laboratory is working with DOE, the National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA) to develop and implement a SuperNova/Acceleration Probe. Although most of the funding to the Laboratory is expected to come from DOE, there is the potential for additional NSF and NASA funds. The Laboratory's senior management has held high-level meetings with DOE and NASA officials to advance the success of this strategic science area.

In support of DOE missions, Berkeley Lab conducts research in partnership with universities and international organizations where its unique expertise or facilities are of specific value to such collaborations. The projects are in many fields, including physics, chemistry, materials sciences, geosciences, and biology. In addition to the research projects, Berkeley Lab science education activities are conducted in partnership with the University of California (UC) and the State of California. The Laboratory has broadened its joint faculty appointments at senior management levels to foster this university association.

The sponsors for Berkeley Lab's strategic scientific capabilities and the associated areas of research that complement DOE's mission areas are described in detail in the Draft Institutional Plan FY 2004—FY 2008, Section III, Laboratory Strategic Plan. The levels of funding provided by these agencies are in Section VIII, Resource Projections and Tables, of the same document.

Successes/ Shortfalls

Berkeley Lab maintains one of the more extensive and diversified portfolios of sponsored projects in the DOE national laboratory system.

Implementation of the PeopleSoft Grants Management module makes Berkeley Lab a leader in modernizing and integrating institutional systems, as well as achieving significant cost savings through retiring the legacy system.

Supporting Data

- Lawrence Berkeley National Laboratory Institutional Plan FY 2003–2007 (December 2002) (http://www.lbl.gov/Publications/Institutional-Plan/2003/IP2003.pdf)
- Lawrence Berkeley National Laboratory Draft Institutional Plan FY 2004–2008 (May 2003)
- Award Management Report for RAPID in IRIS (http://www.iris.lbl.gov)

Objective #1
Criterion 1.1
Performance Measure 1.1.d

Community Relations and Science Education: *Evaluation of management's approach and effectiveness in strengthening relationships with the community and in advancing science education related to Laboratory programs. The assessment focuses on management's effectiveness in addressing community issues in a proactive manner and the successful implementation of science education programs.* **(Weight = 20.0%)**

Assumption:

Weighting for Approach/Deployment and Results: A/D = 40%, R = 60%.

Gradient: See Table 1 at the end of this section.

Performance Measure Result

Community Relations Organization and Planning

In FY 2003, the Laboratory Director took an active role in community relations, meeting with local government officials hosting community forums to address Laboratory/community relations. The Director delegates the general management of community relations and science education to the Head of Public Affairs. This position reports to the Deputy Director for Operations, assuring close coupling of Public Affairs with all operations and administrative activities, as well as maintaining its visibility and access as an element of the Directorate. The Community Relations Plan identifies programs and community service activities for Laboratory managers' participation, and highlights the value of participation in various community organizations. Laboratory Management has enhanced the value of community service through an ongoing review of employee performance-evaluation criteria to include community service.

This marked the first full year for the Public Affairs Department. The Department includes the Government and Community Relations Office, the Communications Department, and the Center for Science and Engineering Education (CSEE). The Head of Public Affairs reports to the Deputy Director for Operations, and works closely with the Director. The Head of Public Affairs serves as a member of the Director's Action Committee (DAC), which meets weekly, and attends the monthly Division Directors' meeting. He also participates, as a member of the Operations senior management team, in weekly meetings of the Operations leaders with the Deputy Director for Operations. This ensures that Public Affairs issues and concerns are taken into consideration at the highest level of Laboratory management.

The Head of Public Affairs holds weekly Public Affairs Council meetings with leaders of the three Public Affairs units. The group works to develop internal and external relations strategies, and reviews the implementation of

programs to raise awareness of the Laboratory and its accomplishments in the local community. It is also responsible for identifying and developing opportunities for the Laboratory to increase its contribution to the local community. The inclusion of CSEE in Public Affairs ensures that the Laboratory's contributions to local educational efforts remain a high priority with senior management. The weekly meetings also serve to provide the Head of Public Affairs with the management and programmatic information he needs to inform senior management of these activities.

Berkeley Lab's CSEE is a leader in the DOE national laboratory system in leveraging the unique capabilities of a national laboratory with the educational advancement of the next generation of scientists and engineers. CSEE develops, implements, and evaluates programs that utilize the resources of the Laboratory to improve the quality of mathematics, science, and technology education. These include projects and activities for public science and technology literacy, precollege (K to 12) to community college, undergraduate, and graduate education. CSEE also offers research fellowships to undergraduate students through a number of DOE-sponsored programs, including the Science Undergraduate Laboratory Internship (SULI); the Community College Initiative (CCI); the Pre-Service Teacher Program (PST); and, in partnership with NSF, the Faculty and Student Teams (FaST) program.

CSEE sponsors summer undergraduate interns, high-school interns, and science teachers for curriculum training and development. Additionally, the Laboratory continued its support of the biotechnician training program of Berkeley Biotechnology Education, Inc. (BBEI), with six interns annually in the East Bay. The Laboratory also had representation and leadership at the Chabot Space and Science Center, BBEI, numerous parent-teacher-student associations, and educational nonprofit groups.

Laboratory Management involvement in community activities included participation on local boards and commissions, educational organizations, Chambers of Commerce, community foundations, and environmental groups, as well as service clubs. It also endorsed enhanced communication with community groups through the wider distribution of Laboratory news; a community newsletter, *Science on the Hill*; an active speakers' bureau; and the Community Relations/Science Education outreach program, Berkeley Lab Friends of Science. The Public Affairs Office continued its expanded role as liaison to key stakeholders in the local and regional community.

The Laboratory's Summer Lecture Series is broadcast to the community via Berkeley Community Media on a local-access cable channel. The broadcast programs of this series accomplish one of management's main objectives: promotion of the Laboratory's scientific mission and accomplishments in local communities. During each year, 15 programs appear six times each over a two-week period.

The Deputy Director for Operations represents the Laboratory on the Hills Emergency Forum (HEF), a regional body established after the 1991 East Bay firestorm. Through this entity and its Vegetation Management Consortium, Berkeley Lab initiated and regularly updates vegetation management protocols that set the standard for regional practices in fire-risk reduction.

Highlights for FY 2003

During the past year, the Laboratory took the following strategic actions to strengthen our relationship with the local community, and to advance our science education activities.

- In October 2002, the Laboratory hosted its most successful Open House. Over 8,000 neighbors came to visit the Laboratory and learn more about its programs and activities. Discussions are underway for the next Open House, tentatively scheduled for October 2004.

- In October 2002 the Laboratory also hosted, for its employees, a mayoral debate between the two candidates running for Mayor of Berkeley. When compared to a similar event four years earlier, this debate found the candidates vying for who could be the most supportive of Berkeley Lab. This is a significant change in attitude and is reflective of the overall improvement in the relationship between the Laboratory and elected city officials.

- With the election of a new Berkeley Mayor in November 2003, the Laboratory sought to use this opportunity to elevate and strengthen City-Laboratory relationships. The Director and the Head of Public Affairs have a quarterly lunch meeting with the Mayor and his Chief of Staff to discuss any issues the City might have with the Laboratory, and to see where the Laboratory can be of assistance to the City. These discussions have been positive, and have resulted in the exploration of new initiatives in education and environmental remediation between the City and the Laboratory.

- This year marked the first full year of *Science on the Hill*, a new quarterly publication designed to inform neighbors and interested community members about the Laboratory. The September 2002 issue, which was dedicated to the Open House, was mailed to all Berkeley residents for the first time; this was a major factor in the record turnout for the Open House. Results from a survey of *Science on the Hill* readers were so positive that it was decided to mail all future issues to Berkeley residents.

- The Laboratory Director hosted the first Laboratory-neighbors conversation in May 2003. The effort was designed to inform the community about the upcoming Molecular Foundry project, as well as other research and projects at the Laboratory. Over 100 people attended,

including the Mayor, who thought it was a successful meeting. Plans are underway to hold similar meetings with the community in the future.

- The Laboratory continues to expand its Friends of Science program. This past year there were seven lectures; over 100 attendees were at a special pre-opening breakfast at the Open House; and the ongoing mailing list has grown to over 250 members.

- The Laboratory has worked hard to prevent any community or civic concern associated with the removal of excess material from Building. 51 (Bevatron). Letters to the City of Berkeley and North Richmond staff, appearances at city councils and commissions, and quick turnaround on requests for information contributed to a diminished level of concern, no negative response from elected officials, and the avoidance of a threatened lawsuit.

- The Laboratory continues to provide public tours, averaging five per month, and arranged over 25 talks, presentations, and speeches by scientific staff to local community members.

- A major effort was undertaken to work more closely with the Berkeley Unified School District. Activities under this umbrella include school tours, high-school-student research participation, and hosting meetings with middle- and high-school science teachers.

- CSEE began a school tour program, with the addition of a half-time retired Oakland science teacher. The emphasis has been on tours for students from surrounding school districts (Berkeley, Oakland, West Contra Costa County).

- CSEE initiated a year-round Careers in Science and Technology program that provides speakers from Berkeley Lab and careers in science to middle and high schools. Several thousand students have participated in the program, which includes a hands-on activity used by Office of Science Director Orbach at a recent National Science Teachers Association meeting.

- The Laboratory expanded its Pre-Service Teacher Program to 16 students (future teachers) and created a model two-week professional-development activity for teachers.

- The Laboratory is hosting the largest number of visiting faculty/student teams (FaST) of any DOE national laboratory.

- The Laboratory has grown its high-school research participation program from 16 to over 40 participants, with the majority of the students coming from the closest communities (Berkeley, Oakland, West Contra Costa County).

Successes/ Shortfalls

The new public affairs organization had its first year of expanding Berkeley Lab's interactions with key stakeholders in the local and regional community.

Laboratory representatives enhanced local community awareness of Berkeley Lab through participation in over 85 boards, councils, and commissions. The Laboratory continued increased distribution of its biweekly internal publication, *Currents*, to nearly 100 community leaders, and distributed the community newsletter, *Science on the Hill*, to over 1,600 community leaders and members.

The Laboratory sponsored public Hills Emergency Forum meetings, distributed fire-reduction materials to community groups and leaders, and gave scientific seminars on the Laboratory's fire-risk-reduction programs at a related conference.

Berkeley Lab was actively involved in community endeavors to improve science education at all grade levels, with focused partnerships in several local school districts.

Supporting Data

- Friends of Science brochure, Web site, flyers for lectures, sample e-mail list (http://www.lbl.gov/friendsofscience/)
- Community newsletters
- Open House flyers
- Sample listing of Laboratory employees in community service
- CSEE Summer High School Student Program highlights
- Tours Tracking Report
- Hills Emergency Forum 10th Anniversary Conference program and Vegetation Almanac cover
- Center for Science and Engineering Education Web site (http://www.lbl.gov/Education/CSEE/)

Objective #1
Criterion 1.1
Performance Measure 1.1.e

Diversity Leadership and Awareness: *Evaluation of senior management's effectiveness in increasing the awareness of diversity in all divisions of the Laboratory. The assessment focuses on the development and implementation of divisional diversity plans and their innovative actions to enhance the work environment for all employees and to engage in proactive methods of diversity outreach and recruitment designed to promote equality of opportunity.*
(Weight = 20.0%)

Assumption:

Weighting for Approach/Deployment and Results: A/D = 40%, R = 60%.

Gradient: See Table 1 at the end of this section.

Performance Measure Result

Diversity Management Implementation

Berkeley Lab has set general goals for diversity-management implementation: (1) the establishment of division diversity action plans that address each division's or department's needs and concerns; and (2) the publication of finalized plans on the Web, which makes them accessible to all Laboratory employees, as well as to the general public. For FY 2003 a new Best Practices Diversity Council (BPDC) has also been established to leverage successful practices throughout Berkeley Lab.

As a result of senior management's commitment to diversity and follow-through by division managers, the Laboratory now has a more pervasive diversity best-practices model. The following principles for this best-practices model have been developed and refined:

- Manifest management commitment and accountability.
- Highlight diversity practices that are priorities for accomplishing Laboratory results.
- Promote equal-employment opportunity, and address one or more barriers that adversely affect equal-employment opportunity.
- Promote fairness and produce noteworthy results.
- Ensure communication between management and staff.

Now in its third year of implementation, diversity best practices are evident in Laboratory divisions' diversity action plans for FY 2003, and in the activities of all levels of management and staff who are now involved in diversity awareness, equal-opportunity building, recruitment, and in making Berkeley Lab a research organization that is welcoming and productive for all employees.

In FY 2003, the Laboratory has further advanced its commitment to diversity by establishing the Best BPDC. The Laboratory established the BPDC to provide a forum for senior management to leverage diversity best practices around each division's various initiatives and programs, and to inform and integrate diversity activities across divisions. Each division director appointed a representative, someone who is actively involved in developing the divisional diversity plan, to the BPDC. The Council will also ensure that the Laboratory's diversity activities continue to be in alignment with top diversity best-practices organizations whose leadership demonstrates a strong commitment to inclusionary practices.

The functional objectives of the Council include the following activities:

- Create synergy between division/department diversity action plans and initiatives.
- Develop a diversity best-practices framework, and extend best-practices models across the Laboratory.
- Mentor new initiatives.
- Visibly recognize and communicate diversity best-practices achievement throughout the Laboratory.
- Identify and address emerging issues.
- Welcome the views of outside speakers.
- Develop a Lab-wide diversity scorecard.

The BPDC Chair also participates in diversity planning by involvement in the Director's review of each division's annual diversity plan and its implementation. These annual reviews are presented by division directors and include presentation of diversity statistics, hiring actions and progress, a review of actions made, and the steps to be taken next year. In addition to the Director and the Chair of the BPDC, participants in the review include the Laboratory Deputy Directors, the Director of Planning and Strategic Development, the Head of the Workforce Diversity Office, and the several division directors of the areas being reviewed (e.g., Physical Sciences, General Sciences, Life Sciences, Computing Sciences, and Energy Sciences). During these reviews, critiques are made by the participants and recommendations are made to the divisions' plans, including suggested approaches to extend the most successful programs across the Laboratory.

The division diversity plans, which are largely focused on recruitment and retention practices, can be found on the Berkeley Lab Web site at http://www.lbl.gov/Workplace/WFDAP/. The Director expects the Council to raise the Laboratory's level of performance in terms of "moving the process of finding promising ideas into the organization."

Diversity Action Highlights for FY 2003

The Laboratory's first year of managing workforce diversity required, and received in the forms of diversity action planning and follow-through, management's leadership and accountability. As the Laboratory approaches its fourth year of implementing division workforce diversity plans, it is now expected that each year, all divisions will continue to update and improve diversity action plans that address "two main elements" as defined by Director Shank: (1) "innovative actions to enhance the work environment for all employees," and (2) "methods of assuring hiring pools that are as diverse as possible."

In FY 2003, divisions have continued to raise the Laboratory's level of diversity performance to the best industry standards. The following activities are notable FY-2003 diversity achievements:

- To improve the workplace environment and advance the professional interests of employees, the Laboratory has moved to a 100% tuition-reimbursement program. This employee advancement program is in its second year, and has resulted in significant increased educational resource use and educational development for employees, moving from $99,000 in tuition in 2002, to $154,000 in 2003, and to an estimated $317,000 in 2003.
- The Laboratory continues to support minority national science associations and UC Berkeley minority graduate recruitment efforts, such as the Berkeley Edge Program and Conference. The Berkeley Edge Program is a UC Berkeley recruitment, retention, and advancement program for traditionally underrepresented minority graduate students in science, mathematics, and engineering. Diversity plans of the Chemical Sciences and Engineering Divisions describe their involvement in the Berkeley Edge Conference, which is designed to encourage underrepresented minority students who are competitively eligible for UC Berkeley's Ph.D. programs to apply to the University.
- School-to-Career internships and Laboratory mentorships in biotechnology and other science areas and engineering have nearly doubled to 46 participants. This growth was accomplished by division leadership who recruited scientists as mentors and made division resources available.
- In their diversity plans for calendar years 2002 and 2003, many divisions continue to cite impressive efforts toward diversity outreach and student internships relative to increasing diversity in our science and engineering workforce. As one example, Computing Sciences identified notable accomplishments in the areas of electronic advertising and minority recruitment, school-to-career placements, targeted colleges and universities for recruitment and minority applicants, and professional development opportunities for Information Technology faculty from local community colleges and high schools.

The hands-on training is ongoing. The specifics for this and all other divisions are available on the Web sites for individual Workforce Diversity Action Plans (see the list of Supporting Documents for the URL), each of which gives prior accomplishments and the updated goals for FY 2003.

- The Earth Sciences Division established a course on verbal communication for scientists and support staff whose native language is not English. About 20 staff members participated in the course and rated it as excellent.
- As part of its Diversity Plan for 2003, General Sciences has included education and public outreach/recruitment efforts. One notable action involves Faculty/Student Research Teams (FaST), a program that establishes research partnerships between faculty from minority-serving colleges and universities, and Laboratory investigators. Students recommended by faculty members participating in FaST spend most of their 10-to-15-week Berkeley Lab appointment working on research assignments under the direction of both the participating faculty member and Berkeley Lab investigator.

The Berkeley Lab workforce has driven the success of Laboratory science, and the Laboratory's reputation for scientific excellence relies on the diversity and creativity of its staff. Overall, the Laboratory's science and engineering (S&E) workforce is composed of 25.2% minority employees, exceeding the national-labor-market availability for minority employees by 10% (see Figure 1.1.e). However, the Laboratory still needs to improve its S&E workforce representation of specific groups, most notably female and African American employees. Through continued recruitment programs at minority institutions and in urban areas, postings, and support of minority-serving science organizations, and strengthening of student programs such as School to Career and CSEE, the Laboratory can continue to enhance the diversity of its S&E hiring pool, which will bring more opportunity to hire a diverse and highly qualified S&E staff.

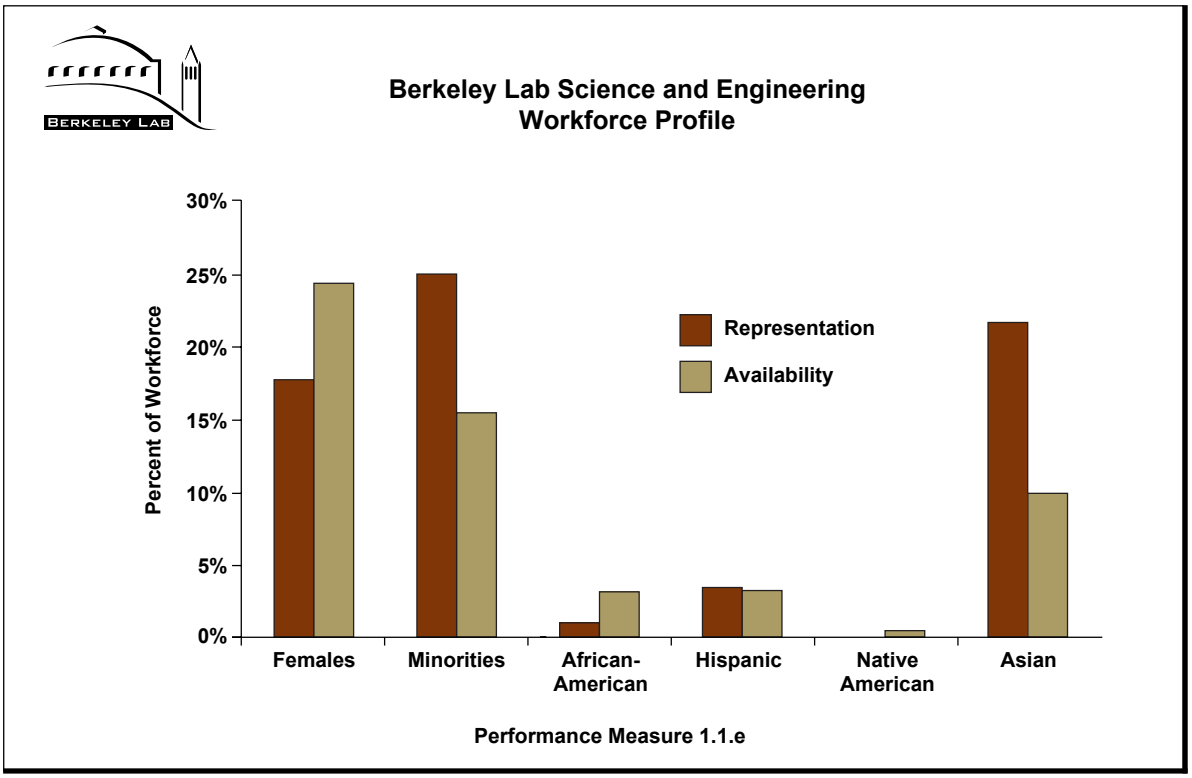


Figure 1.1.e. Berkeley Lab Science and Engineering Workforce Profile. *"Females" and "Minorities" percentages are based on the total S&E workforce. Percentages for African-American, Hispanic, Native American, and Asian are relative to the total S&E workforce, and they total to the second set of data (minorities). Minority females are counted in both minority and female.*

Berkeley Lab continues to show its employees and the surrounding regional workforce that it is committed to their advancement by instituting outreach and recruitment programs and initiatives. In addition to employee-support programs and diversity tools, workforce diversity has also been supported by other Laboratory functions and programs, such as the Human Resources Recruitment Office, CSEE, and the School-to-Career Program.

To further encourage employee accountability, the Laboratory's performance-evaluation criteria continue to include a diversity performance expectation for both management and staff:

"Employees at all levels of the organization are expected to work effectively within our diverse culture by promoting and supporting an environment in which all employees are valued, respected, and included. Managers and supervisors have the additional responsibility to enhance this development by modeling and sustaining the commitment among team members and staff."

In support of the Laboratory's continuing effort to support the Performance Review and Development (PRD) diversity expectation, a diversity training program, "Effective Leadership for Managing a Diverse Workforce," has been instituted for managers and supervisors. This program is ongoing; next

fiscal year, the diversity-training program will include nonsupervisory employees.

This industry best practice is based on the Director's recognition that diversity is valued if it is a means to achieving Laboratory goals, and if individuals are held accountable for their organization's diversity-performance expectation.

Successes/ Shortfalls

In its third year of divisional diversity-development activities, Berkeley Lab division management again participated in diversity planning by submitting diversity action plans that target their short- and long-term staffing and recruiting needs. As they did in 2002, many division managers cited specific efforts toward diversity outreach and student internships, activities supported by the Laboratory's School-to-Career and Center for Science and Engineering Education programs. This Laboratory-wide support of Berkeley Lab's School-to-Career and mentorship programs has in the past year nearly doubled its number of student interns, many of whom have become qualified new hires, advancing the diversity planning and science mission for the Department of Energy.

The Director furthered the Laboratory's commitment to diversity best practices by forming the Best Practices Diversity Council and continuing to include the diversity expectation in all employees' annual PRD, which was introduced for the first time last year. The Best Practices Diversity Council serves to integrate diversity activities at the senior-management level, and the PRD continues to ensure employee accountability for workforce diversity at all levels.

Supporting Data

- Web Site for Workforce Diversity Office (http://www.lbl.gov/Workplace/WFDO/)
- Web Sites for Individual Workforce Diversity Action Plans (http://www.lbl.gov/Workplace/WFDAP/)
- Performance Review and Development forms (http://www.lbl.gov/Workplace/HumanResources/forms)
- Lawrence Berkeley National Laboratory Draft Institutional Plan FY 2004–2008
- Memorandum to Division Directors from Director Shank, Establishment of Berkeley Lab Best Practices Diversity Council (December 2002)
- "New Diversity Council to Focus on Divisional Efforts," *Currents* (January 10, 2003) (http://www.lbl.gov/Publications/Currents/Archive/Jan-10-2003.html#Bulletin)

Table 1. Appraisal Scoring Guidelines for Laboratory Management

The performance expectation for each Performance Measure will use the scoring criteria indicated below. Each Performance Measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

Narrative Rating (Score Range)	*Approach/Deployment*	*Results*
Unsatisfactory (59% and Below)	• Little or no systematic approach evident; anecdotal information	• Little or no results in key mission and business areas.
Marginal (60 to 69%)	• Beginning of a systematic approach to the key mission and business areas. • Early stages of a transition from reacting to problems to a general-improvement orientation. • Major gaps exist in deployment that would inhibit progress in achieving the key mission and business objectives.	• Early stages of developing; some improvements and/or early good performance level in a few key mission and business areas.
Good (70 to 79%)	• A sound systematic approach, responsive to the key mission and business areas. • A fact-based improvement process in place in key areas; more emphasis is placed on improvement than on reaction to problems. • No major gaps in deployment, though some areas may be in the very early stages of deployment.	• Improvement trends and/or good performance levels reported for most key mission and business areas. • No pattern of adverse trends and/or poor performance levels in the key mission and business areas. • Some trends and/or current performance levels show areas of strength and/or good to very good relative performance levels.
Excellent (80 to 89%)	• A sound systematic approach, responsive to the key mission and business areas. • A fact-based improvement process is a key management tool; clear evidence of refinement and improved integration as a result of improvement cycles and analysis. • Approach is well developed, with no major gaps; deployment may vary in some areas.	• Current performance is excellent in most key mission and business areas. • Most improvement trends and/or current performance levels are sustained in most other areas. • Many to most trends and/or current performance levels show areas of leadership and very good relative performance levels.
Outstanding (90 to 100%)	• A sound systematic approach, fully responsive to key mission and business areas. • A very strong fact-based improvement process is a key management tool; strong refinement and integration backed by excellent analysis. • Approach is fully deployed without significant weaknesses or gaps in the key areas.	• Current performance is outstanding in most key mission and business areas. • Excellent performance levels in most other areas. • Strong evidence of industry and benchmark leadership demonstrated in many areas.